

We claim:

1. An embolus extractor, comprising:
  - an elongate shaft having a proximal end and a distal end;
  - first and second struts, each strut having a proximal end and a distal end coupled to the distal end of the shaft; and
  - the struts having a first position and a second position, wherein in the first position, the distal ends and the proximal ends of the struts are spaced at a first distance, and in the second position the distal ends and the proximal ends of the struts are spaced at a second distance, the second distance being less than the first distance.
- 10 2. An embolus extractor in accordance with claim 1, further comprising a sleeve slidably coupling the distal ends of the struts to the shaft.
3. An embolus extractor in accordance with claim 1, further comprising a sleeve slidably coupling the proximal ends of the struts to the shaft.
4. An embolus extractor in accordance with claim 1, wherein in the first position, the struts are disposed generally parallel to and adjacent the shaft.
- 15 5. An embolus extractor in accordance with claim 1, wherein in the second position, a proximal portion of the first and second struts define a generally circular mouth.
6. An embolus extractor in accordance with claim 5, wherein the struts extend generally distally from the mouth to define a generally distally tapering body.
- 20 7. An embolus extractor in accordance with claim 5, wherein the proximal portion of the struts forming the mouth extend from the shaft at between 45° to 90° the length of the shaft.

8. An embolus extractor in accordance with claim 7, wherein the proximal portions of the struts forming the mouth extend from the shaft at between 60° to 90° to the length of the shaft.

9. An embolus extractor in accordance with claim 8, wherein the proximal 5 portions of the struts forming the mouth extend from the shaft at between 80° to 90° to the length of the shaft.

10. An embolus extractor in accordance with claim 1, wherein the struts include a shape memory metal.

11. An embolus extractor in accordance with claim 10, wherein the shape 10 memory metal includes a NiTi alloy.

12. An embolus extractor in accordance with claim 1, further comprising a third strut coupled to the shaft, the third strut having a transverse cross sectional area; wherein the first and second struts each have a transverse cross sectional area greater than the transverse cross sectional area of the third strut.

15 13. The embolus extractor in accordance with claim 1, wherein the first and second struts form at least a portion of a generally circular mouth.

14. The embolus extractor in accordance with claim 13, wherein the first and second struts can move independently of each other.

15. The embolus extractor in accordance with claim 1, wherein the struts can 20 rotate about the elongate shaft.

16. The embolus extractor in accordance with claim 1, wherein the struts can translate at least in part along the elongate shaft.

17. The embolus extractor in accordance with claim 1, wherein at least strut includes a radiopaque material.

18. An embolus extractor, comprising:  
an elongate shaft having a proximal end and a distal end;  
5 a first strut having a proximal end and a distal end, the proximal end of the strut being coupled to the shaft; and  
the strut having a first position and a second position, wherein in the first position, the distal end and the proximal end of the strut are spaced at a first distance, and in the second position, the distal end and the proximal end of the strut are spaced at a second 10 distance being less than the first distance.

19. An embolus extractor in accordance with claim 18 wherein in the first position, the strut is disposed generally parallel to the shaft.

20. An embolus extractor in accordance with claim 18, wherein in the second position, a proximal portion of the strut defines a generally circular mouth.

15 21. An embolus extractor in accordance with claim 20, wherein the strut extends generally distally from the mouth to define a generally distally tapering body.

22. An embolus extractor in accordance with claim 20, wherein the proximal portion of the strut forming the mouth, extends from the shaft at between 45° to 90° to the length of the shaft.

20 23. An embolus extractor in accordance with claim 22, wherein the proximal portion of the strut forming the mouth, extends from the shaft at between 60° to 90° to the length of the shaft.

24. An embolus extractor in accordance with claim 23, wherein the proximal portion of the strut forming the mouth, extends from the shaft at between 80° to 90° to the length of the shaft.

25. An embolus extractor in accordance with claim 18, wherein the strut 5 includes a shape memory metal.

26. An embolus extractor in accordance with claim 25, wherein the shape memory metal includes a NiTi alloy.

27. An embolus extractor in accordance with claim 18, further comprises a second strut coupled to the shaft, the second strut having a transverse cross sectional area; 10 wherein the first strut has a transverse cross sectional area greater than the cross sectional area of the second strut.

28. A method of withdrawing an embolus extractor, comprising the steps of: providing an embolus extractor having elongate shaft, having a proximal end and a distal end and a plurality of struts disposed at the distal end of the elongate shaft, the 15 struts and at least a portion of the elongate shaft being disposed in a patient's vasculature, an embolus contained by the strut;

providing a micro catheter having a distal end; advancing the micro catheter over at least a portion of the elongate shaft; collapsing the struts at least in part at the distal end of the micro catheter; and 20 moving the micro catheter and embolus extractor together proximally.

29. The method in accordance with claim 28, further comprising the steps of:

providing a radiopaque marker at the distal end of the micro catheter, and  
providing a radiopaque marker on the embolus extractor; and  
positioning the markers relative to each other to determine the relative position of  
the micro catheter and embolus extractor.